REMARKS

This application has been carefully reviewed in light of the Office Action dated November 30, 2006. Claims 7, and 9 to 15 are in the application, with Claim 8 having been cancelled herein. Claims 7, 13, 14 and 15 are independent. Reconsideration and further examination are respectfully requested.

Claims 7, 9 to 11, and 13 to 15 were rejected under 35 U.S.C. § 102(b) over U.S. Patent No. 4,205,267 (Williams). Claim 8 was rejected under 35 U.S.C. §103(a) over Williams in view of U.S. Patent No. 5,212,451 (Werner, Jr.). Claim 12 was rejected under 35 U.S.C. § 103(a) over Williams in view of U.S. Patent No. 4,835,461 (Snelling). Reconsideration and withdrawal of the rejections are respectfully requested.

The present invention is directed to measuring electric potential. Among other features of the invention, an oscillating body is axially supported by a torsion spring such that the oscillating body oscillates about the torsion spring, at least one detection electrode is provided on the oscillating body, and a distance between the detection electrode and an electric potential measuring object disposed facing the detection electrode is varied by causing the oscillating body to oscillate. In this way, the present invention can allow for greater design flexibility in measuring electric potential, while providing accurate measurement results.

Referring specifically to the claims, independent Claim 7 defines an electric potential measuring device. The device comprises a torsion spring, an oscillating body axially supported by the torsion spring such that the oscillating body oscillates about the torsion spring, and at least one detection electrode provided on the oscillating body. The device also comprises means for varying a distance between the detection electrode and an

electric potential measuring object disposed facing the detection electrode by causing the oscillating body to oscillate, and signal detecting means connected to the detection electrode for detecting an output signal.

Independent Claim 13 is directed to an electric potential measuring device generally corresponding to the device of Claim 7, but more specifically comprises a pair of detection electrodes provided on the oscillating body, wherein the oscillating body is caused to oscillate such that when one of the pair of detection electrodes comes close to the electric potential measuring object, the other one of the pair of detection electrodes goes away from the electric potential measuring object.

Independent Claims 14 and 15 are directed to electric potential measuring methods generally corresponding to Claims 7 and 13, respectively.

The applied references are not seen to disclose or to suggest the features of independent Claims 7, 13, 14 and 15, and in particular, are not seen to disclose or to suggest at least the features of an oscillating body axially supported by a torsion spring such that the oscillating body oscillates about the torsion spring, at least one detection electrode provided on the oscillating body, and varying a distance between the detection electrode and an electric potential measuring object disposed facing the detection electrode by causing the oscillating body to oscillate.

In responding to prior arguments in support of patentability, the Office Action asserts Williams discloses "(Fig. 2) an oscillating body ([electrodes] 32,34)". (page 6 of Office Action)(emphasis in original). The Office Action further asserts "the disclosure of Williams can be reasonably understood to 'vibrate an oscillating body [i.e., Williams' electrodes 32,34] in a plane parallel to a test surface [20]', as Applicants have interpreted,

and to comprise a support member that axially supports an oscillating body such that the oscillating body oscillates about a support member." (Id.)(emphasis in original). Thus, the Office Action appears to concede that Williams' electrodes 32 and 34 vibrate in a plane parallel to test surface 20, and consequently, that Williams' Figures 2, 3A, 3B, and 3C do not disclose or suggest varying a distance between the detection electrode and an electric potential measuring object disposed facing the detection electrode by causing the oscillating body to oscillate. For at least this reason, the rejections are respectfully traversed.

Furthermore, the Office Action asserts that Williams discloses "*Figures 3a-c show rotation* [of electrodes 32 and 34] *about the center point of Fig. 3b*". (page 2 of Office Action (emphasis in original); see also page 7 ("[Williams'] support member [36] is understood to axially support an oscillating body [electrodes 32 and 34] that oscillates 'about', or around, the support member [36], such that a locus trace, representing the oscillatory body motion in space, would be characterized by a centrode coinciding with the support member [36]."')) As far as Applicants understand the Office Action's assertions, Applicants respectfully disagree with the Office Action's characterization of Williams' Figures 3A to 3C.

As Applicants understand the assertion, the Office Action asserts that Williams' electrodes 32 and 34 rotate around an line that runs through transducer 36 and the center point of Figure 3B. However, contrary to the Office Action's assertion, Williams' Figures 3A to 3C show electrodes 32 and 34 moving from right (Figure 3A) to left (Figure 3C) across the center point of Figure 3B. Specifically, Williams discloses "the electrodes are moved from the position of FIG. 3A to the position of FIG. 3B, . . . [and] the

electrodes are moved from the position of FIG. 3B to the position of FIG. 3C". (column 5, lines 1 to 13; see also, column 5, lines 34 to 39 ("One complete cycle of the vibrator 36 . . . would be, for example, from the position of FIG. 3B to that of FIG. 3A, from that of FIG. 3A through that of FIG. 3B to that of FIG. 3C, and then back to that of FIG. 3B.")) Accordingly, Applicants respectfully disagree that Figures 2, 3A, 3B, and 3C of Williams disclose an oscillating body axially supported by a support member such that the oscillating body oscillates about the support member. For this additional reason, the rejections are respectfully traversed.

Likewise, referring now to amended Claims 7, 13, 14, and 15, Williams is not seen to disclose or to suggest an oscillating body axially supported by a torsion spring such that the oscillating body oscillates about the torsion spring, at least one detection electrode provided on the oscillating body, and varying a distance between the detection electrode and an electric potential measuring object disposed facing the detection electrode by causing the oscillating body to oscillate.

In this regard, and turning specifically to the rejection of Claim 8, the Office Action concedes Williams does not disclose or suggest a support member is a torsion spring. (page 5 of Office Action). The Office Action asserts a combination of Williams and Werner that allegedly would disclose a support member is a torsion spring. (page 5 of Office Action). However, even if the Office Action's combination is permissible, and Applicants to not concede this, the combination would still fail to cure the deficiencies noted above with regard to Williams.

In particular, Werner is seen to disclose a type of electrostatic voltmeter modulator that "utilizes an aperture, placed between the electrode and the surface under

test, to periodically capacitively couple the electrode and the surface through the aperture as the *electrode is moved parallel to the [test] surface*." (column 1, lines 46 to 50 (emphasis added); see also, Figure 2A (element 40) and corresponding text ("electrode 34 will be oscillated in the direction indicated by arrows 40")). Accordingly, this should be viewed as a traversal of the rejection of Claim 8.

The remaining applied reference, namely Snelling, and/or remaining portions of Williams are not seen to cure the foregoing deficiencies, either alone or in any permissible combination. In particular, Snelling is seen to disclose a microdeflector probe for an electrostatic voltmeter in which a flexible finger supported on a base in a cantilever fashion is deflected in response to a potential difference between two electrodes, 21 and 29, to measure a voltage on electrode 29. (See, abstract and column 3, lines 8 to 18 of Snelling). Figures 10 to 12 of Williams are seen to disclose a pair of spaced apart tines 284 and 286 on which are formed electrodes 288 and 290. (See, column 12, lines 16 to 56 of Williams). Accordingly, independent Claims 7, 13, 14 and 15 are believed to be allowable.

The other claims in the application are each dependent from the independent claims and are believed to be allowable over the applied references for at least the same reasons. Because each dependent claim is deemed to define an additional aspect of the invention, however, the individual consideration of each on its own merits is respectfully requested.

No other matters being raised, it is believed that the entire application is fully in condition for allowance, and such action is courteously solicited.

Applicants' undersigned attorney may be reached in our Costa Mesa, California office at (714) 540-8700. All correspondence should continue to be directed to our below-listed address.

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